

## 35—130 Removal and installation of rear axle shaft flange, adjustment of bearings

### Rear wheel bearings

End play of rear axle shaft flange	0.04—0.06
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### Rear axle shaft flange

Permissible vertical runout on concentric alignment in installed condition	0.12
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Permissible lateral runout in installed condition	0.12
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Thickness of flange	9.5—10.0
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Permissible vertical runout on bearing seats and on running surfaces for radial sealing rings	0.03
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Permissible vertical runout on concentric alignment	0.02
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Fit (dia.) for brake disc	67.00
	66.97

Dia. of bearing seats	outside	46.028
		46.017

	inside	41.013
		41.002

Dia of running surface for outer radial sealing ring	72.00
	71.81

Twist on running surface for outer radial sealing ring	lefthand flange	righthand twist
	righthand flange	lefthand twist
	Length of twist on circumference of running surface	20

Wideness of spacing sleeve	11.8—12.0
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### Lubricant

Lubricant for rear wheel bearing	Multi-purpose grease refer to specifications for service products page 267
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Quantity each side	50 g
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Tightening torque	Nm
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Hex bolt for attaching rear axle shaft to rear axle shaft flange	1st version (M 12)	95
	2nd version (M 8)	30

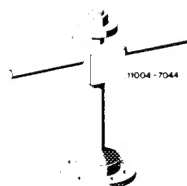
## Special tools

Socket for slot nut  
rear axle shaft flange



115 589 02 07 00

Impact puller for rear axle shaft flange



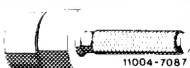
116 589 23 33 00

Puller for tapered roller bearing outer race



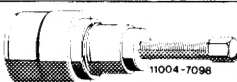
115 589 00 33 00

Remover for tapered roller bearing  
outer race



115 589 02 43 00

Puller for tapered roller bearing  
inner races (basic tool)



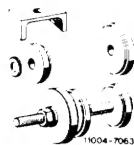
001 589 36 33 00

Collet for puller 001 589 36 33 00  
for tapered roller bearing inner race



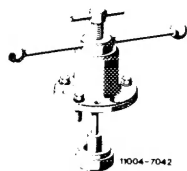
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Installer for tapered roller bearing outer races  
and radial sealing rings on semi-trailing arm



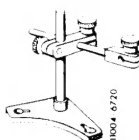
116 589 11 61 00

Assembly tool for rear wheel bearing



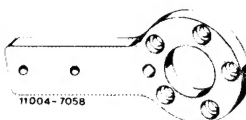
116 589 24 61 00

Dial gauge holder



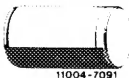
136 589 04 21 00

Assembly plate for rear axle shaft flange



136 589 05 31 00

Installer for tapered roller bearing race  
on rear axle shaft flange

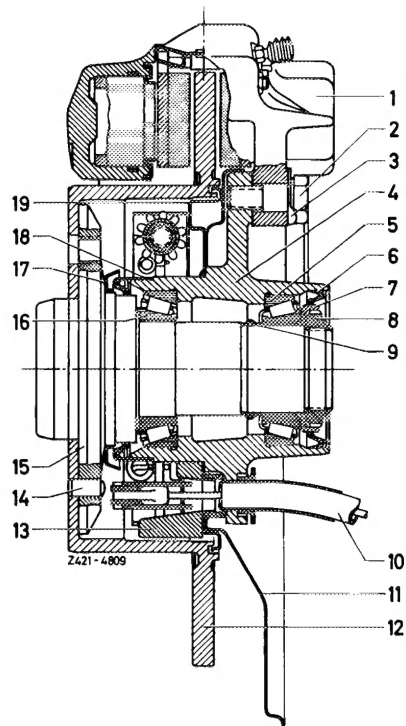


116 589 09 15 00

## Note

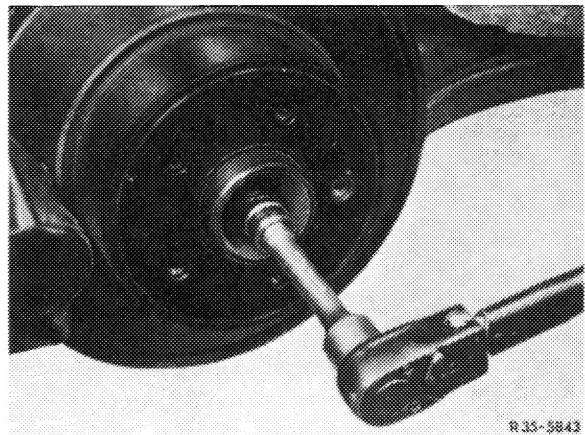
Jobs on bearing of rear axle shaft flange can also be completed with the rear axle installed.

- 1 Caliper
- 2 Hex bolt (self-locking 2nd version only)
- 3 Locking plate (1st version only)
- 4 Wheel carrier
- 5 Inner tapered roller bearing
- 6 Inner radial sealing ring
- 7 Sealing ring (thrust washer)
- 8 Slot nut
- 9 Spacing sleeve
- 10 Cable control
- 11 Cover plate
- 12 Brake disc
- 13 Brake carrier
- 14 Cyl. pin
- 15 Rear axle shaft flange
- 16 Outer tapered roller bearing
- 17 Protective ring
- 18 Outer radial sealing ring
- 19 Cover ring

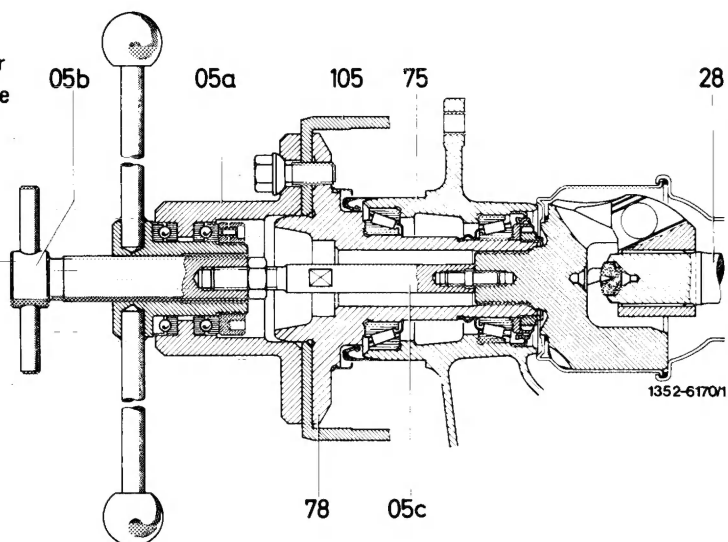


## Removal

- 1 Unscrew hex bolt for attaching rear axle shaft to rear axle shaft flange and remove together with spacing sleeve and tensioning washer.



2 If required, push rear axle shaft (28) out of rear axle shaft flange (78) by means of assembly fixture (05).

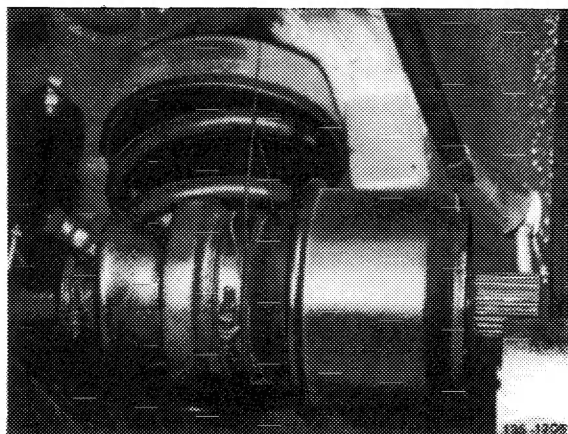


3 Remove assembly tool.

#### Attention!

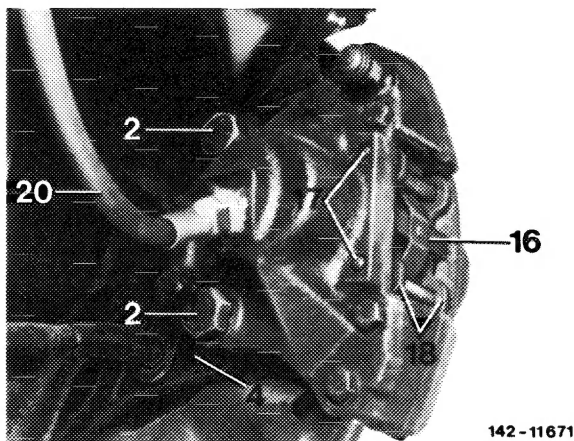
When removing assembly tool, do not bend rear axle shaft too much and do not drop shaft.

With rear axle in place, rear axle shaft is best tied with a wire to torsion bar or rear spring, to continue working without obstruction.

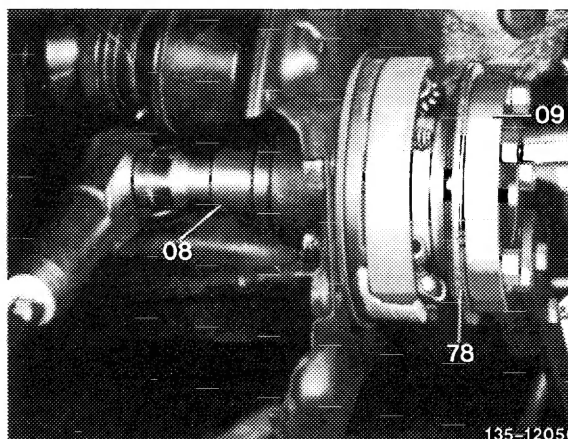


4 Remove caliper and brake disc (42-228).

5 Remove brake shoes of parking brake, if required (42-530).



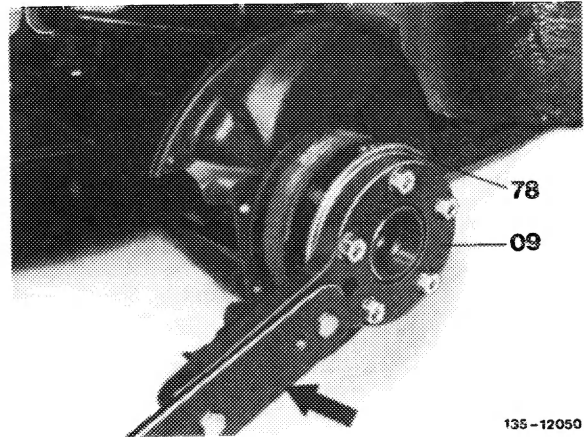
6 Unlock slot nut on rear axle shaft flange. Attach assembly (09) with extension (self-made) to rear axle shaft flange (78), loosen slot nut with slot nut wrench (08) and remove.



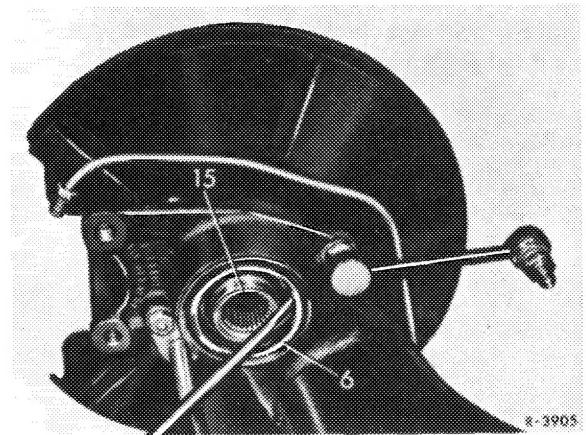


7 With the rear axle installed, the rear axle shaft flange (78) or the assembly plate (09) can be supported with an extension (arrow) as shown in illustration.

**Note:** For loosening slot nut with semi-trailing arm removed, clamp assembly plate (09) on shaft into vise.

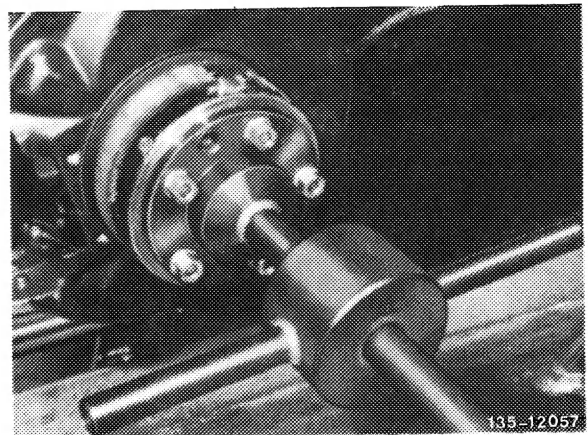


8 Remove sealing race and inner radial sealing ring (6) from wheel carrier by means of a screw driver.

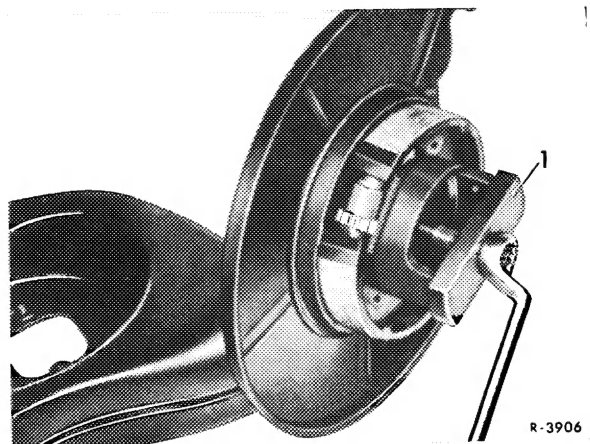


9 Knock rear axle shaft flange out of wheel carrier by means of impact puller and remove bearing inner race together with spacing sleeve.

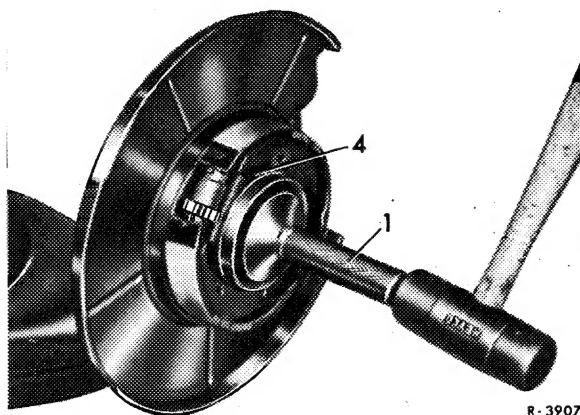
10 Remove outer radial sealing ring from wheel carrier.



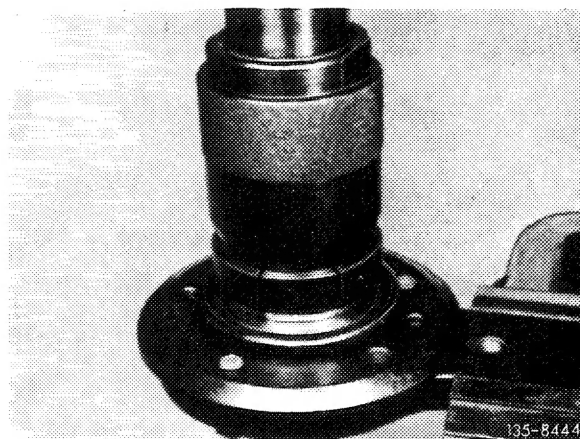
11 Pull bearing outer race of outer tapered roller bearing out of wheel carrier by means of puller (1).



12 Knock bearing outer race of inner tapered roller bearing out of wheel carrier (4) by means of removing mandrel (1).

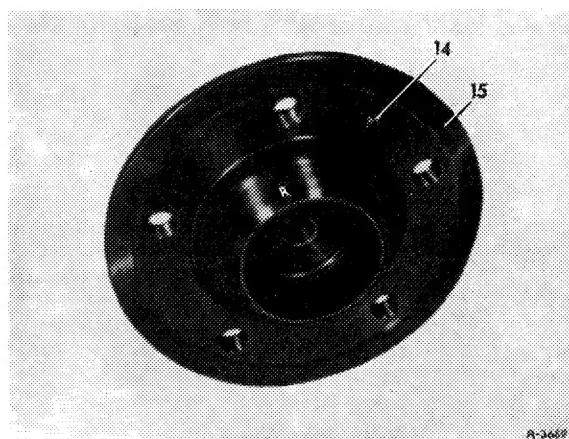


13 Clamp assembly plate with rear axle shaft flange into vise. Pull outer bearing inner race from rear axle shaft flange by means of puller.



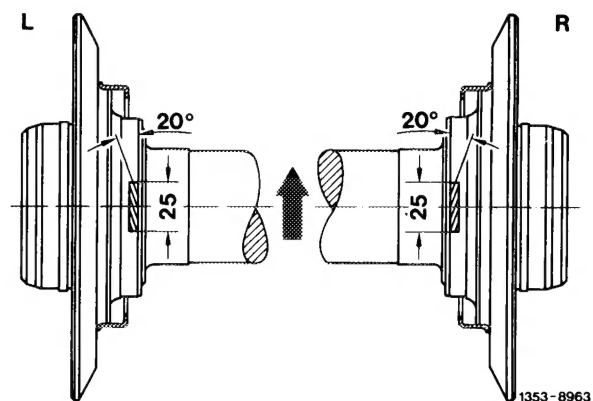
14 Check all parts for re-use. Pay special attention to running surfaces for radial sealing rings on rear axle shaft flange and on sealing ring. Replace worn parts. Check rear axle shaft flange for vertical and lateral runout.

**Note:** The rear axle shaft flanges are provided with an oil return spiral on running surface for outer radial sealing ring, which differs for lefthand and righthand side. For identification, the chamfer for concentric alignment is provided with a punched-in "R" for right-hand side and a punched-in "L" for lefthand side.



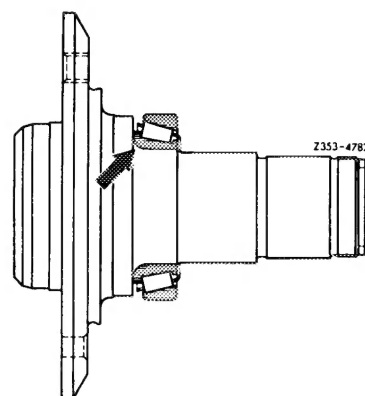
15 If required, refinish oil return spiral with emery cloth (grain 180) at an angle of approx.  $20^{\circ}$  for a length of 25 mm.

L = Lefthand rear axle shaft flange  
R = Righthand rear axle shaft flange

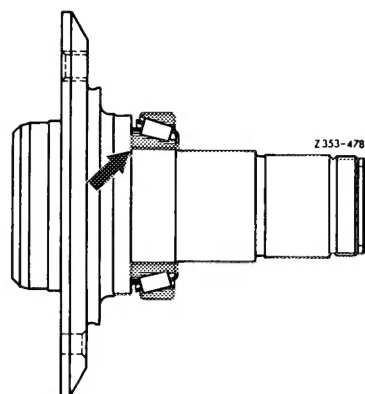


## Installation

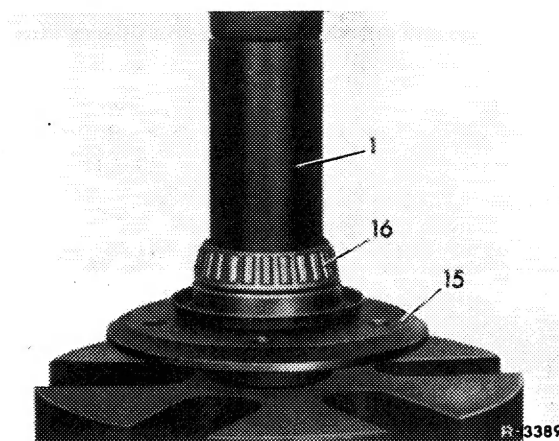
16 On rear axle shaft flange of present version use tapered roller bearing with large fillet (arrow) **only**.



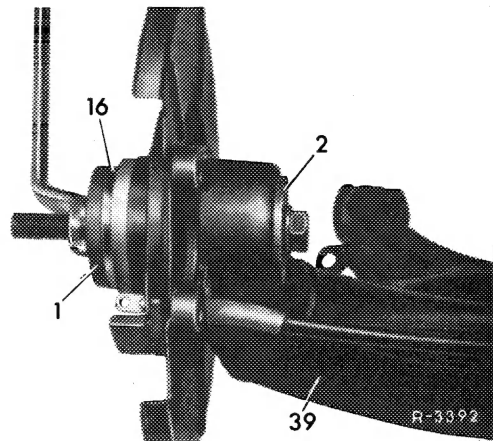
17 For rear axle shaft flange of version used up to now a tapered roller bearing with larger radius may also be used.



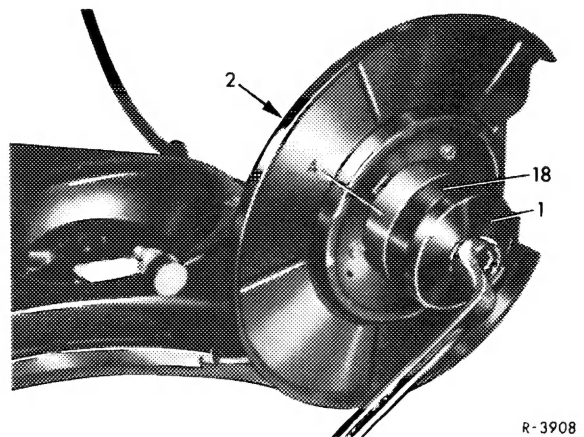
18 Press bearing ring of outer tapered roller bearing (16) on rear axle shaft flange (15) with a matching tube (1)



19 Install both bearing outer races into wheel carrier by means of installer (1 and 2).

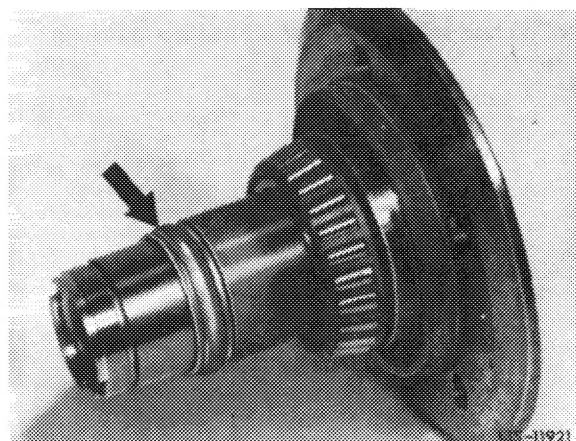


20 Coat seat for outer radial sealing ring on wheel carrier (4) with sealing compound and carefully mount new radial sealing ring (18) by means of puller (1 and 2) so that ring rests against chamfer of wheel carrier.



21 Coat or fill both tapered roller bearing inner races and cavity between both bearing outer races in wheel carrier with multi-purpose grease.

22 Mount new spacing sleeve (arrow) on rear axle shaft flange and introduce rear axle shaft flange into wheel carrier.

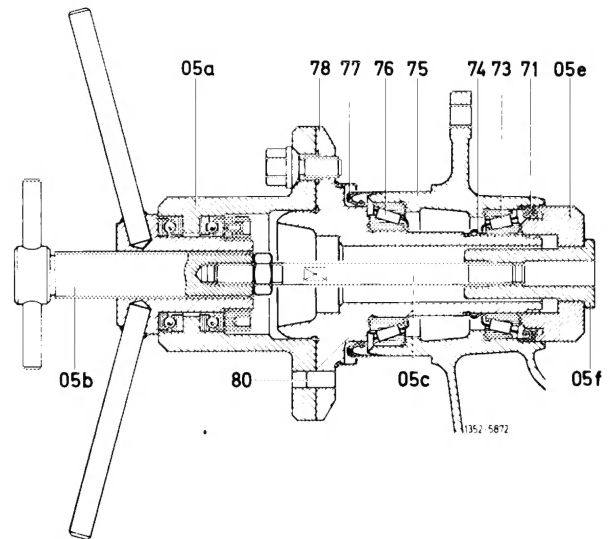


23 Place bearing inner race for inner tapered roller bearing (73) on rear axle shaft flange.

24 Fill new radial sealing ring between the two sealing lips with multi-purpose grease. Coat radial sealing ring with sheet metal jacket at OD with sealing compound. Mount radial sealing ring with partially rubberized jacket in dry condition. Press bearing inner race and radial sealing ring on or in by means of assembly tool (05a–05f).

25 Mount sealing ring and screw-on a new slot nut.

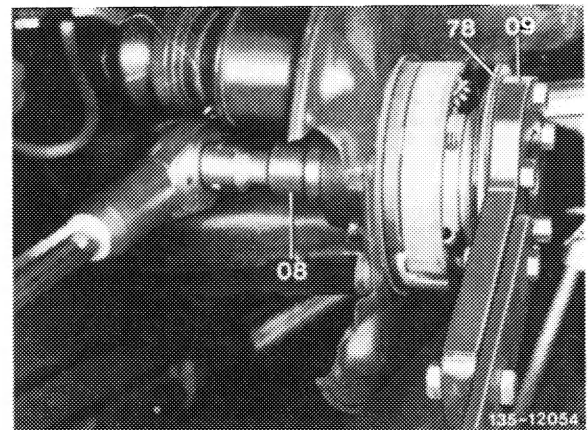
- 05a–05f Assembly tool
- 71 Radial sealing ring
- 73 Tapered roller bearing, inner
- 74 Spacing sleeve
- 75 Semi-trailing arm
- 76 Tapered roller bearing, outer
- 77 Radial sealing ring
- 78 Rear axle shaft flange
- 80 Fitted notched pin



## Adjustment

26 Attach assembly plates to rear axle shaft flange.

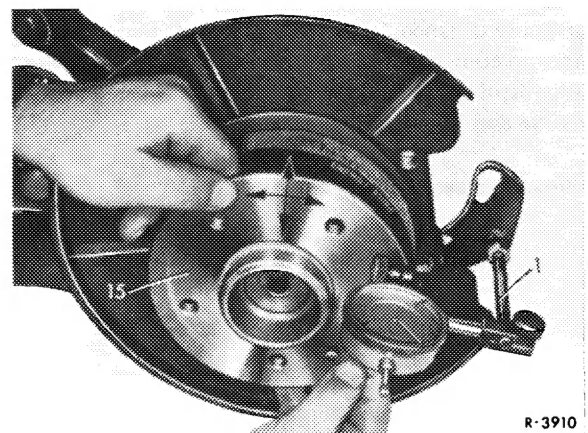
27 Keep tightening slot nut with slot nut wrench (08) until a slight end play can still be noticed. Attach dial gauge holder to wheel carrier.



28 Check end play of rear axle shaft flange while moving rear axle flange back and forth and simultaneously turning to the right and left (end play 0.04–0.06 mm).

### Attention!

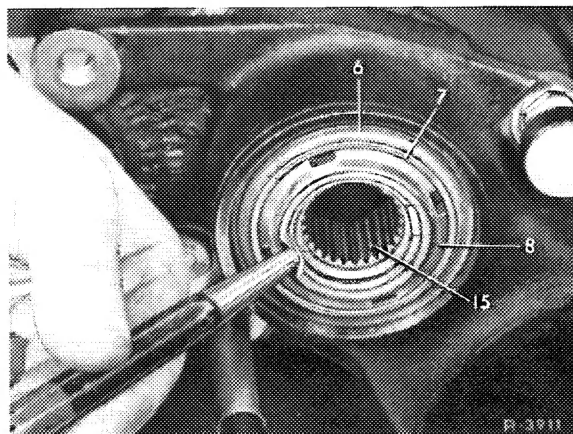
If there is no more end play because the slot nut has been tightened too much, do not make corrections by releasing slot nut but always install a new spacing sleeve and set up end play once again.



R-3910

29 Lock slot nut (8) by bending at two points into respective slots on rear axle shaft flange (15).

30 Pull rear axle shaft into rear axle shaft flange.



31 Tighten hex bolt for attaching rear axle shaft to rear axle shaft flange of 1st version (M 12) to 95 Nm.

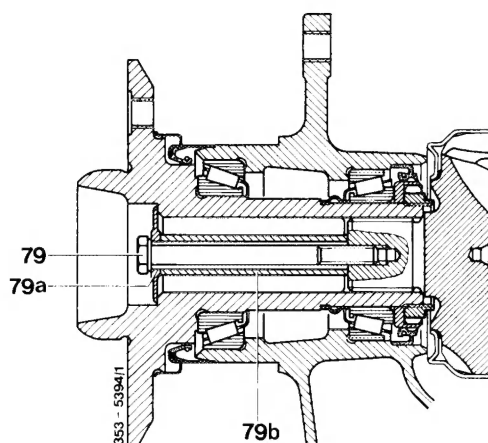
On 2nd version, mount hex bolt (79; M 8) with tensioning washer (79 a) and spacing sleeve (79 b) and tighten to 30 Nm.

#### Attention!

Replace tensioning washer (79a) after one-time use.  
Provide tensioning washer (79a) in range of screw head with oil (2nd and 3rd version).

#### 2nd version

- 79 Hex. screw M 8 x 90
- 79a Tensioning washer
- 79b Spacing sleeve (72.5 mm long)

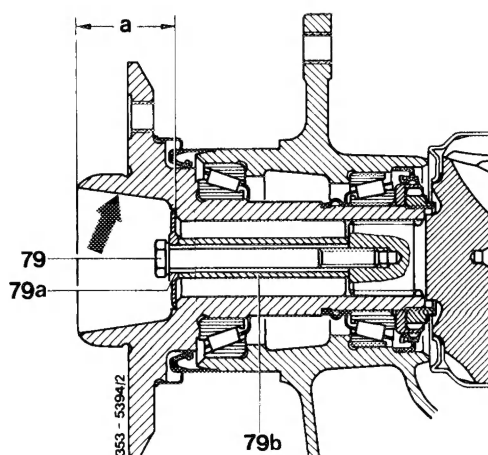


**Note:** Starting September 1979 the inside contour (arrow) of rear axle shaft flange has been modified and the contact surface of the tensioning washer has been moved inwards by an additional 5 mm. To guarantee the correct association of hex. screw and spacing sleeve, measure distance "a" on rear axle shaft flange from face to contact surface of tensioning washer by means of a depth gauge and take the length for the spacer sleeve and hex. screw from table.

**Be sure to avoid wrong combinations!**

#### 3rd version

- 79 Hex. screw M 8 x 85
- 79a Tensioning washer
- 79b Spacing sleeve (67.5 mm long)
- a = 37 mm





## 2nd rear axle shaft flange version

a = 32 mm

Pertinent hex. screw = M 8x90

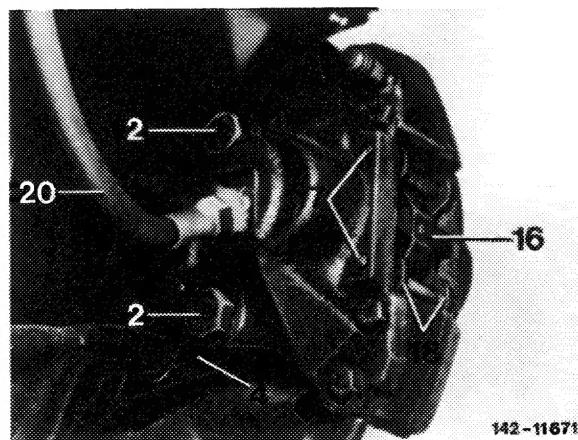
Pertinent spacing sleeve = 72.5 mm

## 3rd rear axle shaft version

a = 37 mm

Pertinent hex. screw = M 8x85

Pertinent spacing sleeve = 67.5 mm



As an additional external identification characteristic, the shorter hex. screw is provided with a recess on hex. head, on the shorter spacing sleeve the surface is bright, on the former sleeve it is phosphatized (bonderized).

32 Install brake shoes of parking brake, if removed (42-530).

33 Mount brake disc and vent brake system, if required (42-010 and 42-228).

